drawn is evenly adhered to the mold surface by suction and simultaneously fixed to the entire surface allowing the contours and micro-contours (topography) of the mold-surface to transfer to/ to impress on the article to be deep-drawn, such as a plastic film, without any loss of quality.

A further aspect of the present invention is directed to a porous shaped article comprising

(i) a minor amount of a binder and

(ii) a major amount of spherical inorganic matrix particles

formed from the above-described material. Said shaped article can be a mold which is made by a method comprising the steps of

- mechanically mixing
  - (i) a minor amount of a binder, and
  - (ii) a major amount of spherical inorganic matrix particles ,
- forming the mixture into the desired shape,
- and exposing it for a time and at a temperature sufficient to solidify the mixture.

In particular, the method comprises the steps of

- mechanically mixing a major amount of spherical inorganic matrix particles with a minor amount of a binder selected from the group consisting of:
  - (a) particulate organic thermoplastic polymers,
  - (b) liquid organic polymer resins, and
  - (c) aqueous solutions of alkali silicates
- forming the mixture into the desired shape, and
- treating the mixture for a time and at a temperature sufficient to
  - in case of (a), sinter the polymer, or
  - in case of (b), cure the polymer, or

- in case of (c), harden the mixture.

In accordance with the present invention the above-described porous shaped article can have a structured, preferably a micro-structured surface. If said porous shaped article is used as a molding tool said structure may be transferred to/impressed on a work-piece, for instance, a molded article. The surface structure of the mold is perfectly transferred to the plastic, thus achieving an extremely detailed definition to the minutest detail.

A mold having a structured surface or a finer-structured surface having a micro-topography may be formed using the composition according to the present invention by impressing thereon a structured master-mold.

According to the invention, the mold is formed from a master mold or from a negative imprint of the original workpiece, respectively. Typically, the method comprises the following steps:

i. Providing the master mold with a separating means;

ii. Laminating those parts of the mold surface which will not image the later shape-producing surface of the mold to be produced (this step may also be made at the end);

iii. Embedding of pneumatic or hydraulic conduits, inserts and similar which are to be formed directly into the porous mold into the master mold;

iv. Obtaining an optimal mixing of the mixture consisting of matrix particles and binder;

v. Filling the mixture into the master mold;

vi. Stamping and oscillating/vibrating the mixture filled layer-by-layer into the master mold;

vii. Leaving the mold inside of the master mold to set and thereafter conducting a pressure and heat treatment depending on the molding composition which has been used;

viii. Removing the master mold from the mold;

ix. Removing the separating agent by a washing or grinding and finally, an annealing for reaching an optimum hardness and/or strength;

x. Covering the outer surfaces of the mold with the exception of its structure transferring/impressing surface with a surface layer, which seals the pores. In the sealing layer opening can be provided for the connection of a duct.

In this context it shall be noted specifically that because the mold can be processed mechanically, it is possible to provide for ducts for generating positive pressure or reduced pressure in the mold also at a later stage.

Alternatively, by means of the production steps set forth above a porous form body block of arbitrary shape and surface structure can be made by machining such as drilling, milling, rotary forming and grinding, engraving, impressing or polishing, etc.

The manufacturer of the mold has various alternatives to modify or repair the tool without it suffering from quality. It is evident that by such a procedure it is possible to produce tools for molds at low costs. The molds are also suitable for the production of individual pieces such as patterns, serial tools and prototypes.

A further aspect of the present invention relates to a device for conducting a fluid between a space and a duct comprising a porous shaped, part made of the composition as described above, whose surface is porous at the point where the fluid flows through, and the other surface areas are provided with a fluid-impermeable closing means (seal), which are interrupted by at least one duct connection opening.

Again, the surface, at the point where the fluid flows through may be structured and therefore may be used to transfer/impress its topography/structure to a work-piece.

In conjunction with the present invention, said fluid may be a liquid as well as a gas. Typically, the gas is air or nitrogen.

A further embodiment of the invention is directed to a deep-drawing mold comprising a duct and a shaped porous part as described above, wherein the